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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,388	10/01/2003	Hiroaki Taka	0044-0270P	4433

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EXAMINER

COLON SANTANA, EDUARDO

ART UNIT PAPER NUMBER

2837

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,388

Applicant(s)

TAKA ET AL.

Examiner

Eduardo Colon-Santana

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaitani et al. U.S. Patent No. 6,259,226.

Referring to claim 1, Kaitani et al. discloses a controller for an AC motor (see all figures and respective portions of the specification). Kaitani et al. further discloses a motor controller having exciting current detectors (4), an exciting current amplitude computation means (106 and 7) for computing an exciting current amplitude value and a voltage impression unit (3) for impressing voltages at values corresponding to the exciting current amplitude value.

As to claim 2, Kaitani et al. discloses that the controller is for an AC motor, wherein stepping motors are included. Additionally the voltage impression unit (3) feeds the motor winding currents

varying in the form of a sine wave provided by a sine wave generator (6) every time a command pulse is impressed.

Referring to claim 3, wherein the motor winding currents are fed by a PWM inverter (3).

As to claim 4, Kaitani et al. further describes a current amplitude deviation detection means (10 or 12) for computing a current amplitude deviation value representing a difference between a current amplitude command (i_{da}^* , i_{qa}^*) and exciting current amplitude value (i_{da} , i_{qa}); a current command computation means (13 or 11) and multiplication means (17) for computing current commands in the form of at least one of sine wave signal and cosine wave signal as provided by the sine wave generator (6) on the basis of an angle command (θ_{re}) for multiplying the values corresponding to the deviation values, and outputting the voltage impression signals (V_{ua}^* , V_{va}^* , V_{wa}^*) to a voltage impression unit (3).

Referring to claim 6, the motor is a three-phase AC motor and the current command computation means compute the current commands in the form of sine wave signals as provided by the sine wave generator (6) on the basis of an angle command (θ_{re}).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the

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manner in which the invention was made. See in addition MPEP § 706.02(1)(1) and § 706.02(1)(2).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaitani et al. in view of Kuwano et al. U.S. Patent No. 6,747,433.

4. Referring to claim 5, Kaitani et al. addresses all the limitations of the base claim above, but does not explicitly describes having a motor control device as claimed being applied to a two-phase AC motor. On the other hand, Kuwano et al. discloses a two-phase AC stepping motor controller wherein the stepping motor is controlled by a PWM inverter (70). Since Kaitani and Kuwano are in the same field of endeavor, Kaitani would have recognized the purpose disclosed by Kuwano. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a two-phase or three-phase motor, since according to the wiring method on the stator, the AC motor can be classified into any phase type.

Allowable Subject Matter

Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if incorporated in the independent claim they depend on, including all of the limitations of the base claim and any intervening claims.

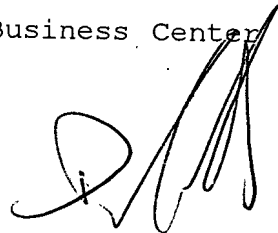
Conclusion

5. The prior art made of record in form 892 and not specifically relied upon is considered pertinent to applicant's disclosure to further show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon-Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Martin can be reached on (571) 272-2800 X.37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER

ECS
February 17, 2005